

# ***Set The Stage - A Brief “personal” MACRO Viewpoint***



## **Most Powerful Economic Leaders**

- Lowest common denominator (driven by Greed and Avarice)
- Read William Butler Yeats “Second Coming”

## **Legislators**

- Pathetically sold out to economic powers - Minnie Pearl
- Not leading, rather brokering the American economy on behalf of most powerful investors

⌘ Energy Sector driven by “Sunk Investment” in worst technologies

# ***2009 Stanford Study***



⌘ Energy systems ranked by impact on:

☑ Global Climate Change

☑ Pollution

☑ Water Supply

☑ Land Use

☑ Wildlife

☑ Public Health & Safety

☑ Potential over-all economic benefit

# ***Best Options***



⌘ Wind

⌘ Solar

⌘ Geothermal

☒ planetary tectonic heat

⌘ Tidal

⌘ Hydroelectric

# ***Poor Options***



## ⌘ Nuclear

- ONLY viable if risk is socialized (see sold out legislators - above)

## ⌘ Coal with Carbon Capture

- Requires additional energy to capture carbon
- No such thing as “clean dirt”... Combustion = Carbon

## ⌘ Oil

- Inherently inefficient as a transportation fuel
- Incomplete combustion
- Less than 20% of potential energy transferred to motion
- Military subsidy alone is stupendous

## ⌘ Natural Gas

- A good “transition” fuel for transportation
- Resource wasted on combustion

# ***Suggested Reading***



- ⌘ November 2009 Scientific American Magazine Article - "A Path to Sustainable Energy"
- ⌘ We CAN be free of combustion fuel by 2030 -
  - ☒ Employ every able-bodied human on Earth
  - ☒ Generate Global Economic Prosperity
  - ☒ Stop Human Induced Climate Change

# ***Jobs***



⌘ Energy Efficiency

⌘ Wind

⌘ Solar PV

⌘ Solar Thermal

⌘ Tidal

⌘ Geothermal

⌘ Hydroelectric

# ***Job Skills***



## ⌘ Basic Construction

☒ Energy Efficiency - Residential and Commercial

## ⌘ Heavy Construction

☒ Wind, Tidal, Geothermal, Utility Scale Solar, Hydroelectric

## ⌘ Fundamentals of Electricity

☒ Solar PV - Residential and Commercial

## ⌘ Fundamentals of Plumbing

☒ Solar Thermal Water Heating

# ***Need All Learning Options***



## ⌘ Community College System

- ☑ Important and essential, degree based, multi-semester, professional level

## ⌘ Adult Education

- ☑ Short-term, quick response, boots on the ground basic training
- ☑ Contractor and worker development



# ***Home Performance Contractors***



## **⌘ Energy Auditor**

- ⊗ Should be the sales arm of a Home Performance Contracting Business
- ⊗ Private consultant model has not generated energy savings

## **⌘ Home Performance Contractor**

- ⊗ HVAC
- ⊗ Insulation
- ⊗ Air Sealing
- ⊗ Alternative Energy
- ⊗ Xeriscaping
- ⊗ Water Management
- ⊗ And More...

# ***EETCKC***

## ***Energy Tech Course***



- Multi- Week
- Basic Construction Skills
  - Tools and Techniques
  - Hands-On
- Fundamentals of Electricity
- Fundamentals of Plumbing
- Intro to Business Management

**EETCKC**



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